DOCUMENT RESUME

ED 405 104 PS 025 056

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TITLE Endangered Play, Endangered Development: A Constructivist View of the Role of Play in Development and Learning.
PUB DATE 96
NOTE 17p.; In: Playing for Keeps: Supporting Children's Play. Topics in Early Childhood Education, Volume 2; see PS 025 050.
PUB TYPE Information Analyses (070) -- Viewpoints (Opinion/Position Papers, Essays, etc.) (120)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Childhood Needs; Constructivism (Learning); Cultural Influences; *Early Childhood Education; Imitation; Learning Processes; Piagetian Theory; *Play; *Young Children
IDENTIFIERS Piaget (Jean); *Play Learning; Vygotsky (Lev S)

ABSTRACT

Piagetian and Vygotskian theories may be used as starting points to examine the role of play in development and learning from a constructivist perspective, including how children use play to deepen their understanding and skills, encounter new problems, and incorporate newly mastered skills into their play. Contemporary factors such as an emphasis on teaching the basics and increased television viewing undermine children's abilities and opportunities to engage in active play. Using three children, constructivist approach may be used to illustrate play as integral to their knowledge construction. Often, the most intense play themes involve key areas that need to be mastered. Individual style, family culture, prior knowledge and experience, and current needs and interests are incorporated into children's play. A constructivist view allows the differentiation of true play from activities simply labeled as play, such as imitation of televised behavior, using coloring books, or playing video games. When children do not become deeply involved in meaningful play, develop the tools necessary to engage in constructive play, have opportunities for play, and have rich and meaningful experiences to bring to their play, their cognitive, social, and emotional development is undermined. A constructivist view provides a strong argument for advocating play as the center of the early childhood curriculum. (KDFB)

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ED 405 104

Endangered Play, Endangered Development: A Constructivist View of the Role of Play in Development and Learning

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There are a growing number of voices expressing concern that childhood play is being seriously undermined. A variety of factors—parents, teachers, educational policies, media, toys—are often mentioned in discussions about the reasons why play is in jeopardy. Play time is being shortchanged at many schools as more emphasis is placed on teaching "the basics" at younger and younger ages (Elkind, 1987; Jones and Reynolds, 1992; Klugman and Smilansky, 1990). Many children have busier lives than in the past, so they have less free time to engage in rich and meaningful play (Elkind, 1988). Instead of playing when they do have free time, children are often watching TV—an average of four hours a day—not to mention time spent watching videotapes or playing video games

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(Levin and Carlsson-Paige, 1994). And then, even when they do play, highly realistic, media-linked toys often channel children into imitating the TV shows they have seen rather than into developing their own creative and imaginative play (Carlsson-Paige and Levin, 1987, 1990; Levin and Carlsson-Paige, 1995).

Why are so many educators and researchers expressing concern about the changes they see in childhood play? What are the implications for children if, in fact, they do not engage in constructive, rich, and creative play? What are the possible effects on children's overall growth and development when their play is undermined? Central to answering these questions is understanding play—what it is and the functions it serves in promoting healthy development and learning.

While there is widespread consensus about the importance of play in the early years, a debate still continues over what constitutes an adequate definition of play and how play contributes to development and learning (Hughes, 1995; Klugman and Fasoli, 1995). Where one fits within the debate and the degree of importance one places on the role of play in the early years are generally tied to the underlying assumptions one makes about how children develop and learn.

A Constructivist Approach

Many of those who argue most strongly for the importance of play in the early years are those who adhere to a constructivist view. A constructivist view has at its roots cognitive-developmental or developmental-interactionist theory (Athey, 1988; Berk, 1994; DeVries and Kohlberg, 1987; Kohlberg and Mayer, 1972; Piaget, 1973; Piaget and Inhelder, 1969). This position argues that children build knowledge and skill through a slow and continuous process of construction. Children do not passively take in information from the world around them and learn it; rather, they actively transform it into something that is unique and personally meaningful. They use their experience as the content for building new meanings and skills onto what they have already learned. Through this process of interaction between individuals and the environment, increasingly sophisticated and meaningful understandings and skills develop.

From a constructivist perspective, play is a vital part of the

whole process of constructing knowledge (for example, see Carlsson-Paige and Levin, 1987, 1990; DeVries and Kohlberg, 1987; Forman and Kuschner, 1977; Kamii and Devries, 1978; Piaget, 1951; Smilansky, 1968; Wassermann, 1990). Using this perspective, this paper examines how play is an integral part of the learning process. It also speculates about how and why, when children do not have adequate opportunities to play or do not develop adequate tools for play, there is cause for serious concern.

Looking at Play with a Constructivist Lens

- Tanaka, a kindergartner, is painting at a table. She is carefully dipping her paint brush into a color and then stroking it onto her paper. She is having an ongoing monologue with herself that documents what she is doing—e.g., "I made a yellow line there." She makes several paintings, beginning each with a vertical line drawn down the center of the page, then adding more vertical and horizontal lines until the paper is divided into many smaller sections. The length, direction, color, and placement of each line are made very carefully, and the resulting configurations of boxes vary from picture to picture. In the fourth painting, a drop of paint inadvertently lands in the center of a box. Tanaka stops abruptly, stares at the drip with a worried look, then smiles and proceeds to make dot patterns within several other boxes. In her fifth painting, after she has filled the paper with boxes, she immediately begins to add dots to the boxes in still other patterns. At this point, Tanaka exclaims, "There!" She stands up and looks at her five-painting series and then goes to get help to hang her pictures up to dry (*See Figures 1 and 2, p. 76*).

- Mario, who recently had his fourth birthday party, watches his father prepare food and then feed his baby sister. He leaves the room and quickly returns with his doll. Mario looks at his father, then cups his left hand, scoops his right hand into it, and offers some pretend food to his doll. After a few scoops, Mario picks up the doll and goes into his playroom. He sets the doll on the floor and begins to stack some large cardboard building blocks in a way that resembles a tall chair, then puts his doll in it. He builds a second chair, onto which he places his teddy bear. Mario gets a can of playdough and carefully

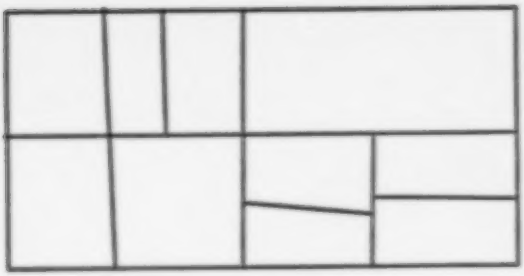

Figure 1.
Tanaka's First Painting

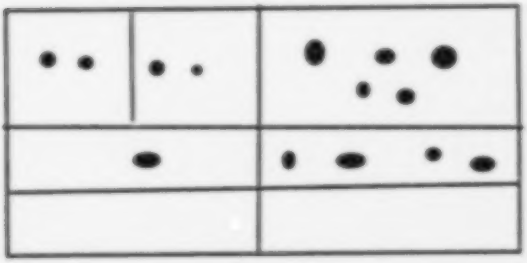

Figure 2.
Tanaka's Fifth Painting

pulls out some pieces, putting unequal amounts on plates he has put in front of the doll and teddy bear. He pauses, staring at the plates, then shifts the amounts of dough until both piles appear to be about the same. Next, he takes out the rest of the playdough and carefully breaks it into four pieces, holding them next to the bear's and doll's pieces. He keeps moving little bits of playdough from one chunk to another. When all the chunks seem about the same, he carefully scans them all and sighs. He reaches for some crayons from a can, sticks one into each chunk of playdough, and starts to sing: "Happy Birthday to you . . ." (Adapted from Carlsson-Paige and Levin, 1990, pp. 21–22).

- At almost eleven years old, Ray loves to draw. He always has a sketch pad handy to use in his spare time. Recently, he has

become very interested in drawing comic book superheroes, especially muscular X-Men characters. He has made a lot of progress drawing endless, muscle-bound figures. Then he gets a book on how to draw bodies and muscles for his birthday. He becomes fascinated and immediately tries to draw bodies with accurate muscles, commenting that he "never realized just making bodies look like they have muscles isn't enough . . . you need to learn how to draw real muscles that look and work right!" After about a week of focused effort making endless, very stiff drawings of the various body parts with accurately drawn muscles, he returns to drawing his X-Men action figures. They are quite transformed from the ones he was drawing before he had the week's diversion with his new book. He repeats this sequence again a few weeks later, when he returns to the new book and spends several days working on how to draw realistic facial features—eyes, mouths, noses.

These three children are constructing knowledge as they engage in a rich and creative play process. They are using something they find interesting about what they already know in unique and creative play. But as they play and try things out through repetition and then variation, they encounter (assimilate) something new or unexpected, a new problem or challenge. The new information or situation does not quite fit into what they already know. They experience confusion (disequilibrium.) They try to figure out or master the new content by adjusting (accommodating) their current ideas to the new content. They learn something new and thereby reach a new level of comfort (equilibrium). Once this happens, they immediately try out their new mastery in their play until yet another challenge is encountered.

Figure 3, "The Play Process as an Integral Part of Learning and Development," (p. 78) provides a highly schematized summary of this process. The play evolves through several steps:

1. playing with what is already mastered or known,

2. encountering an interesting problem to solve as one plays,

3. solving or mastering the problem in the play,

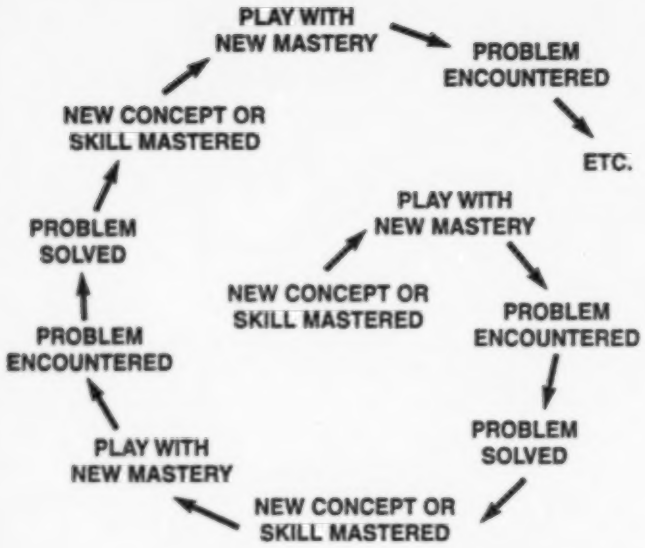

Figure 3.
The Play Process as an Integral Part of Learning and Development

4. having a new concept or skill to work on in play,

5. playing with what has been learned or mastered.

We can think of this spiraling progression as both a motivator and cause for development. The children's play gradually evolves and advances as new masteries and understandings build onto what came before. The process seems to remain endlessly interesting and self-motivating: first children feel the power of knowing how to do something interesting, then experience the challenge of figuring out something new, and then get the new power that comes from having something new to try out. Furthermore, the distinction between work and play often seems to blur as children move back and forth between having fun as they use what they know and hard work as they struggle to figure out a new challenge.

This illustrates the developmental processes described by both Piaget and Vygotsky. Piaget (1951, 1955) saw the process of assimilation (taking in information and using it for one's own pleasure, without adapting one's thinking to it) and accommodation (adapting one's current thinking or schema to take new information into account) as basic to all aspects of developmental and learning. The role of the environment in promoting development was to provide an "optimal mismatch" (optimal amount of disequilibrium) between what children already knew and more advanced knowledge. Play was one of the central mechanisms by which children experienced this. Vygotsky (Berk, 1994) also saw play as central to children's development. Development advances along a "scaffolding" in which the role of the environment is to provide children with experiences a little bit higher up the scaffolding (the "zone of proximal development"). Play provides children with a vital opportunity to experience and work in this zone.

How Tanaka, Mario, and Ray Construct Knowledge through Play

Using this constructivist framework to look at these three children's play reveals that all three are highly engaged in original and personally meaningful play:

- In her play, Tanaka is interested in systematically dividing up her paper into sections with a series of parallel and perpendicular lines. To do this she uses prior knowledge about such things as how to apply individual colors and make straight lines with a paint brush and how to attach words to actions. She explores her play interest over several pictures, slightly varying where she places the lines and the patterns they make with each new drawing. She is learning about organizing and divide up two-dimensional space with perpendicular straight lines (a vital part of learning both math and reading), when she experiences a problem (disequilibrium)—an unexpected drip suddenly intrudes on her fifth painting. For her play with lines to continue, she is forced to figure out (accommodate to) something new. She does this by switching her focus to what can go inside the boxes; and finds a new way to work on filling in space:

dots. She now begins to "play" with this new discovery, to try out and vary it. The new thing she is "working" on—applying dots to fill in two-dimensional spaces—builds on what came before—i.e., lines—thereby furthering her understanding of how to organize two-dimensional space.

- As the focus of his play, Mario brings in content that is central to his recent social world—his father feeding his baby sister and his recent birthday party. He uses many aspects of his prior knowledge and skill to recreate his birthday party through dramatic play: what he knows about imitation to feed his sister as his father did, symbolization to make crayons stand for candles and playdough stand for cake, and representation to put blocks together to make chairs. In the course of his play, he decides to give the two stuffed animal participants "cake." But as he does this, an interesting problem (disequilibrium) seems to arise: The animals have different amounts of cake. Mario gets so interested in trying to equalize the playdough that he uses all the rest of it to try to work out exactly how to make each portion "equal." In fact, the issue of how much cake each child could have had caused some stress at his real party. Only when he is satisfied that he has mastered this challenge by creating two equal pieces (reached equilibrium) can the party resume. In the course of dealing with the cake distribution problem, Mario has accomplished a lot in his play—for instance, he has worked on his cognitive understanding of quantity and equivalence and his social understanding of fairness and nurturance.

- Ray, while quite a bit older than the other children, is still using play in the service of his development. He loves to draw and has been working intently on how to draw muscular comic book characters. He has recently learned how to draw figures that "looked" very muscular, which he seems to be quite happy about (in equilibrium), when he gets a book that gives him a lot of new information about the reality of muscles. He experiences disequilibrium when he realizes that just making them "look right" does not

make them "right." He has a new challenge: learning how to draw muscles that actually match what muscles in the body are "really" like. He works very hard at mastering this. Once he does, he has accommodated his drawing to this new learning. Then, as he uses or "plays" with his new skill and experiences the power of his success, he finds a new challenge: "the faces just don't look good enough anymore"—and the whole process begins again.

As we look at these children's play, we can see that all three control what happens and use what they know in their own unique ways—they are the players/actors, script writers, producers, prop people. No one else could go through the process of mastering similar skills in quite the same way. And as they play, they are learning specific attitudes, values, and skills for actively working out what they know and for building new meanings through play. They seem to have attained a certain level of ease and comfort, using their play to do this. In the process, they are experiencing the sense of competence and power that can come from using what they know to control their environment and to master new ideas and skills. In sum, they are using their play to further their learning and development. And we might even conjecture that they would probably not have become as skillful at the tasks and concepts they are working on without this rich play process.

Implications for Development and Learning

As an integral part of the knowledge construction process, play is a mechanism of vital importance across all areas and levels of development, not just in the early years. For instance, we see it as children master new physical skills. A baby who has just figured out how to stand up tries it out over and over again, first with great intensity and seriousness as she tries out the new skill, then gradually with playfulness, and often even with humor and delight as she tries putting more weight on first one foot and then the other, or accidentally lets go of the supporting chair and wobbles a bit before she reclaims the chair and her balance. We see it in humor, really another form of play, where jokes and laughter generally focus on playing with and varying what has recently been mas-

tered—as when a baby who has just learned the labels "dog" and "cat" plays with that knowledge by pointing to a cat, saying "dog," and then laughing in glee.

Often, the most intense play themes in which children engage at particular ages and stages involve the key areas or issues that need to be mastered at that particular level of development. Two year olds will initiate endless variations on the game of peek-a-boo, which provides an avenue for them to expand and deepen their understanding of object permanence. Eight year olds, after they have mastered the reading process, often love playing with wide varieties of secret codes; these help them use, vary, and extend their understanding of symbols and signs as means of communication. Also at this age, children often become involved in collecting—for instance, sports cards or stamps—and endlessly sorting their collections into increasingly complex categories; not surprising, this interest comes soon after the children have reached the stage of concrete operations, at which they have become capable of logically categorizing by multiple attributes.

But in addition to age and stage issues, individual children bring their own styles, family culture, prior knowledge and experience, and current needs and interests into their play. These will play a crucial role in determining what they play and how they play it at any given time. So in order to support a rich play process for individual children, we have to take these individual differences into account.

Finally, the more opportunities an individual has to bring what has been mastered into a rich and meaningful play process—to try it out and see how it works in a variety of situations and circumstances—the more fully and deeply that knowledge is likely to become integrated into what is already known, the more competent the individual will be in using it, and the more likely it will be to further development and learning.

All That Looks Like Play Isn't Play

While a constructivist lens can help us identify and appreciate play, it can also help us identify the many activities frequently labeled "play" that are not. That is, by looking at whether a child is involved in a dynamic process of constructing knowledge *or* simply mimicking what has been seen or following a highly prescribed

path, it is possible to figure out whether or not an activity is constructive play.

> Jay, a four year old, grabs a small toy knife and sticks it many times into an action figure from the "He-Man—Masters of the Universe" TV show. He says, "You're dead, you're dead." He throws the doll away, saying, "I got you. You're crushed . . . You're dead." He pulls out another figure and repeats the sticking action with the knife. He stomps on the two "dead" figures, then picks up a "Transformer" [a toy connected to the "Transformer" TV cartoon program], and carefully changes it from a tank into a robot. He attaches a gun to one hand and a big fist to the other. He runs over to the two "dead" characters and goes "POW, POW! Now, you're really dead. I killed you. I'm He-Man" (Adapted from Carlsson-Paige and Levin, 1987, pp. 37–38).

Jay is engaging in an activity that many might call "play." But there are significant differences between this scenario and the three earlier ones that call this conclusion into question. Jay seems to be imitating what he has seen on television. He is repeating similar violent actions over and over—his version of what He-Man does. He is using his toys and props in limited and repetitive ways that seem to be determined by how the toys look. He brings only the most salient aspects of the TV show and little content from his direct experience into the play. There also is very little change and development of his activity over time. There is little evidence of the knowledge construction process described in Mario, Ray, and Tanaka's play.

Looked at in this way, Jay is really involved in what Piaget and Inhelder (1969) called imitation—i.e., letting external circumstances take over as he adapts (accommodates) his actions to correspond to the demands and models of the outside world rather than actively using his own experience to construct personally meaningful knowledge. There is little observable evidence that he experiences disequilibrium or tries to master something a little more advanced than what he already knows—"optimal mismatch" or "zone of proximal development." As a result, Jay is getting few of the benefits that constructive play provides but instead seems to be

learning how to imitate the violence he has seen on TV.

This same method of analysis can lead us to other activities that are frequently labeled "play" but that rarely are. Using coloring books and coloring in worksheets involves staying within someone else's lines rather than creating one's own. Playing with Barbie dolls usually involves dressing them for roles defined by the designer of the outfits (e.g., Safari Barbie) and then undressing them, rather than developing roles and play scenarios from meaningful personal experience. Similarly, playing video games often requires shaping oneself to what the game creator intended, not coming up with original ideas or bringing in personally meaningful content.

It is important to look at what a child is doing with a given material or activity before deciding if it is primarily play or imitation. There will be times when children doing one of the above activities are, in fact, engaged in constructive play. What if Ray, the child from the earlier scenario who loved to draw X-Men, decided to cut out all the eyes from characters in a coloring book, glue them on pages of his sketch book, and then draw his own X-Men faces to go with the eyes? Here he would be involved in a constructive play process—transforming the coloring book into something of his own making, in the service of his own interests and learning.

Undermining Play Undermines Learning[1]

When children are involved in play that meets the criteria spelled out earlier, endless opportunities arise for them to further their social, cognitive, and emotional development in an integrated and holistic manner. If children do not become deeply involved in such meaningful play processes, do not develop the tools necessary to engage in constructive play, do not have opportunities to engage in play as an integral part of all their masteries and learnings, or do not have rich and meaningful content from direct experience to bring to their play, then there are serious implications for all aspects of their development and learning.

[1]This section is adapted from D. E. Levin, "Media, culture, and the undermining of play in the United States." In E. Klugman, ed. *Play, policy and practice* (St. Paul, MN: Redleaf Press, 1995), pp. 175–184.

Undermining of Cognitive Development and the Acquisition of Basic Intellectual Skills.

Without rich and meaningful play, the whole process of actively transforming experience into meaningful cognitive knowledge can suffer. Children are denied a central vehicle for experimenting with new ideas, developing skills, building new ideas onto what is already known, and generalizing from what is known to new and varied situations.

Children are also put at a disadvantage in developing the tools they will need for later learning. From a constructivist perspective, the very skills children learn to use as they play are necessary prerequisites for successfully mastering academic content. For instance, high-quality play requires children to find personally interesting content to work on—new masteries to exercise, new problems or questions to try to figure out. As children persist in problem solving, their creativity, imagination, and cognitive knowledge are all utilized and enhanced. They experience a sense of empowerment that comes from seeing how what they know can affect their world and from achieving a new level of understanding. As children repeatedly experience this mastery process in their play, they develop a deep sense of themselves as capable and competent problem finders and problem solvers—as competent learners. They also become increasingly adept at solving actual problems and develop skills that can be transferred subsequently to other situations.

Current trends in early childhood curriculum development assume that children can actively construct knowledge—for instance, literacy is taught in a print-rich environment where children find meaningful problems about the literacy process to engage in deeply. This process assumes that children are problem finders and problem solvers, see problem solving as enjoyable and satisfying, and view themselves as capable and competent "problem solvers." Children learn to do this kind of process in play (Bredekamp, 1987; Bredekamp and Rosegrant, 1992; Wassermann, 1990).

Imitation like Jay's He-Man and Transformer "play" does not provide children with the opportunities they need to develop this foundation for intellectual and academic growth. Instead, they mimic someone else's ideas and do not transform them into some-

thing that has personal meaning and intellectual power.

From a constructivist perspective, the social trend toward devaluing play may be occurring because when children have time for play, what parents and teachers are really seeing is imitative and rote behavior, not play. If this is so, adults may be less motivated to provide time for play and instead focus children's efforts on more direct methods of teaching—i.e., prescribed and rote activities.

Undermining of Social Development and the Acquisition of Interpersonal Skills.

Meaningful play is vital to healthy social development (Carlsson-Paige and Levin, 1992; Levin, 1994). As we saw in his pretend birthday party, Mario replays an important social event with his doll and bear using what he already knows to build meaningful social knowledge about nurturance and fairness. Play with other children can be especially important as a vehicle for trying out what is already known about such skills as give-and-take and perspective taking and than adapting them to the demands and needs of playmates.

If play is undermined and children have fewer opportunities to interact with one another in meaningful play, the potential effects on the development of their social understandings and skills are very worrisome. Children who use their shrinking play time at home and school to imitate the actions of television characters (like the Mighty Morphin Power Rangers), as Jay does, are following someone else's script about how to treat others. Their interactions with one another and with toys can become prescribed and rote. In such a situation, they are not engaging in the active construction of social knowledge necessary to develop a broad repertoire of increasingly advanced social understandings and skills.

In addition, the violent content children often imitate represents a very narrow range of the possible social behaviors they should be trying out and incorporating into their repertoire of socially responsive and responsible behavior. Conflicts are initiated and resolved in their TV-derived scenarios by fighting; any act of aggression, no matter how heinous, is justified for the "good guys." As children make imitating violence a central feature of their play with one another, they cannot help but incorporate aggressive behavior into their developing social repertoire. The narrow and

highly stereotyped ideas that children bring to their imitative play about people presented in TV programs—especially those about gender and race—promote learning stereotypes and narrow children's opportunities to develop to their full potential.

Undermining of Emotional Development

Rich and meaningful play provides Ray, Tanaka, and Mario with safe arenas for working on novel, exciting, puzzling, or disturbing content. As they do this, many of their basic emotional needs are being met—they experience trust, autonomy, mastery, power, and competence. Such opportunities are a vital part of developing feelings of well-being and positive self-esteem.

Children's emotional development is jeopardized when they are deprived of meaningful opportunities to experience the personal power and satisfaction that can come from creating play that resonates deeply with who they are and what they need. In such situations, all aspects of development can be jeopardized. Children may fail to develop the necessary confidence in try to construct new meanings or to rely on their own skills and resources to negotiate their world. Such children may begin to look outside themselves for satisfactions—to media, toys, and peers. In the extreme, this process may develop into an antecedent of addictive behavior—the need to look to the outside for an external quick fix to achieve a fleeting sense of well-being—as a substitute for not learning how to find satisfaction from within.

Implications for Education

Understanding more fully how play contributes to all aspects of healthy development and learning lends strong support to current concerns about the dangers children face when they do not engage in healthy play. It sheds light on how the many factors mentioned as negatively influencing children's play may actually contribute to its demise—for instance, how single-purpose, TV-linked toys often take the control of play away from children and channel them into imitating what they have seen on TV. It also points to the specific ways children's development and learning can suffer when their play is undermined.

On a more positive note, a constructivist view of play provides us with powerful tools for promoting constructive play. It creates a

strong argument for advocating play as the center of the early childhood curriculum and for incorporating the study of play into early childhood teacher education programs.

Finally, a constructivist lens can inform our efforts to promote healthy play in all children. More specifically, it points to several approaches:

- planning many opportunities for children to use play as an integral part of the concepts and skills that are being taught;
- minimizing activities that teach skills and concepts in isolation or by rote because both cut off avenues for bringing content into play, where it can be fully mastered;
- avoiding dichotomies between work and play so that children are encouraged to use play to construct meaning from what is taught;
- giving special help to those children who seem to have the hardest time engaging in rich and personally meaningful play;
- learning to identify the specific content and problems individual children are working on in their play and then working to facilitate and extend their involvement both in and out of play;
- designing play opportunities with the specific interests of individual children in mind;
- planning activities that capitalize on the deep, age-specific developmental needs and interests of a group of children.